

WHAT IS CLAIMED IS:

1. A stent for placement in a bifurcated body lumen having a main branch and a side branch, said stent comprising:
a main tubular stent body having a first end, a second end, a lumen therethrough, and a side opening have a plurality of laterally deployable elements therein.

2. A stent as in claim 1, wherein the elements are formed as an integral part of the stent body.

3. A stent as in claim 2, wherein, prior to deployment, the laterally deployable elements are aligned in a tubular envelope defined by the tubular stent body.

4. A stent as in any of the preceding claims, wherein the main tubular stent body is resilient so that it may be released from constraint for deployment.

5. A stent as in any of the preceding claims, wherein the main tubular stent body is deformable so that it may be expanded by a balloon catheter.

6. A stent as in any of the preceding claims, wherein at least a portion of the main stent body is radiopaque.

7. A stent as in claim 6, wherein at least a portion of the main stent body surrounding the side hole is radiopaque.

8. A stent as in any of the preceding claims, having a radially compressed configuration, wherein the length is less than 4 cm and the diameter is less than 2 cm.

9. A stent as in any of the preceding claims, wherein the side hole comprises a continuous band.

10. A stent as in claim 9, wherein the laterally deployable elements are inwardly projecting loops of the continuous band.

11. A stent for placement in a bifurcated body lumen, said stent comprising:

09600348-010702

3 a main tubular body having a first end, a second end, and a side opening
4 between said ends, wherein a first portion of the main tubular body between the first end
5 and the side hole opens in response to a first radially outward pressure and a second
6 portion of the main tubular body between the side hole and the second end opens in
7 response to a second pressure, wherein the first pressure is less than the second pressure.

1 12. A stent as in claim 11, wherein the first pressure is in the range
2 from 1 atmospheres to 10 atmospheres and the second pressure is in the range from
3 2 atmospheres to 18 atmospheres.

1 13. A stent as in claim 11 or 12, wherein the first portion has a first
2 axial spine and the second portion has a second axial spine, wherein the first axial spine
3 opens circumferentially to a first force and the second axial spine opens circumferentially
4 in response to a second force, wherein the first force is less than the second force.

1 14. A stent as in claim 11 or 12, wherein the first portion comprises
2 serpentine rings with a first strut length and the second portion comprises serpentine rings
3 with a second strut length, wherein the first strut length is greater than the second strut
4 length.

1 15. A stent system comprising:
2 (a) a stent as in any of the preceding claims; and
3 (b) a second stent adapted to fit within and contact the laterally deployable
4 elements of the main tubular stent.

1 16. A method for attaching a second stent to a first stent, said method
2 comprising:
3 expanding a main tubular stent body; and
4 laterally deflecting a plurality of elements disposed about a side opening
5 on the main tubular stent body.

1 17. A method as in claim 16, further comprising placing a second stent
2 into the side hole so that said second stent engages the laterally deflected element.

1 18. A method for deploying a stent in a bifurcated body lumen, said
2 method comprising:

09600348-010702

3 providing a stent having a first portion, a second portion, and a side hole
4 between said portions;
5 expanding a first portion against a luminal wall segment on one side of the
6 bifurcation;
7 aligning the side hole with the branch lumen; and
8 expanding the second portion on the other side of the bifurcation.

1 19. A kit comprising:
2 a stent as in any of claims 1 to 10; and
3 instructions for use setting forth a method including the following steps:
4 (a) expanding the main tubular stent body in a body lumen so that a side
5 hole on the stent body is aligned with a branching body lumen; and
6 (b) laterally deflecting a plurality of elements disposed about the side
7 opening so that they enter into the branching body lumen.

1 20. A kit comprising:
2 a stent system in claim 9; and
3 instructions for use setting forth a method including the following steps:
4 (a) expanding the main tubular stent body in a body lumen so that a side
5 hole on the stent body is aligned with a branching body lumen;
6 (b) laterally deflecting a plurality of elements disposed about the side
7 opening so that they enter into the branching body lumen; and
8 (c) placing the second stent into the side hole so that said second stent
9 engages the laterally deflected plurality of elements.

1 21. A kit comprising:
2 a stent as in any of claims 11-14; and
3 instructions for use setting forth a method comprising the following steps:
4 (a) expanding a first portion against a luminal wall segment on one side of
5 the bifurcation;
6 (b) aligning the side hole with the branch lumen; and
7 (c) expanding the second portion on the other side of the bifurcation.

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